

minal veins which unite behind into a single trunk after receiving branches from the allantoic bladder, and two branches (epigastric veins) from the iliac veins; anteriorly the right vein atrophies, and the left is distributed to the liver.

† In the Saurians there are also primitively two allantoic veins. "They unite with two epigastric veins (homologous with those in Amphibia), which connect them with the system of the posterior cardinal veins. The left of the two eventually atrophies, so that there is formed an unpaired allantoic vein. This vein at first receives the vena cava inferior close to the heart, but eventually the junction of the two takes place in the region of the liver, and finally the anterior abdominal vein (as it comes to be after the atrophy of the allantois) forms the portal system and breaks up into capillaries in the liver." In the Crocodiles and Chelonians both anterior abdominal veins appear to persist. I have quoted these passages from Balfour because they express clearly, and at the same time briefly, the relations of the anterior abdominal vessels in the adult as well as the foetus of the various groups of Vertebrata, and may serve for comparison with the following account of what appears to me to be a similar structure in *Echidna*. On opening the body-wall of *Echidna* I at once noticed the presence of a large vein running along the ventral wall of the body in very close connexion with it; posteriorly this vessel (which was very conspicuous from being full of blood, and was no mere fibrous ligament) arises from a vascular network upon the under surface of the bladder. Anteriorly the vein passes down from the body-wall and is distributed to the left half of the liver. I am not able to state with certainty whether there is any connexion with the veins of the limbs, but am inclined to believe that there is not.

There seems to me to be no doubt that this blood-vessel really corresponds to the anterior abdominal vein of the lower Vertebrata and to the allantoic vein of the mammalian foetus; its occurrence in *Echidna* is another fact among many which show that the Monotremata have preserved more of the ancestral characters than any other family of the Mammalia.

5. On five new or little-known Species of East-African Birds, represented in Mr. H. H. Johnston's First Collection from the Kilimanjaro District. By Captain G. E. SHELLEY, F.Z.S.

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(Plate LI.)

Mr. Johnston's first collection of 94 skins having been placed in my hands by the Kilimanjaro Committee of the British Association, I have considered it advisable, not only to describe at once three species which I consider new, but also two others which are well represented in the present valuable collection, and have been



NECTARINIA REICHENOWI.



only recently shortly characterized in the 'Journal für Ornithologie.'

Of the remaining thirty-three species of which this collection contains examples, I hope to treat at some future time, when Mr. Johnston has returned from his exploration of this high mountain-range, and has brought home the rest of his specimens.

1. *MUSCICAPA JOHNSTONI*, sp. n.

Kilimanjaro, ♀, 6000 feet.

Entire upper parts uniform slaty blue; wings and tail slightly browner and darker, the feathers edged with the same colour as the back. In front of the eyes, cheeks, and lower portion of the ear-coverts ashy white; owing to the state of the skin I cannot confidently define the exact limits of the ashy white on the sides of the head. Chin, throat, and sides of the body ashy grey, fading into ashy white on the remainder of the breast and abdomen, and almost into white on the thighs and under tail-coverts; axillaries and under wing-coverts white; under surface of the quills slaty brown, fading into buffish white on portion of their inner margins. Bill apparently leaden-grey, with a buff patch extending over about two thirds of the base of the culmen, and with the tip black. Legs brownish black. Total length 6 inches, culmen 0·5, wing 3·35, tail 3, tarsus 0·9.

Owing to the indifferent state of the skin, I keep this species in the genus *Muscicapa*, although it does not agree with that nor with any other of the genera recognized by Mr. Sharpe (Cat. B. Brit. Mus. vol. iv.). It has long, well-developed rictal bristles, and a broad but unusually deep bill, which is almost as deep as wide at the front of the nostrils. In general appearance it comes nearest to *M. caeruleascens*, Hartl., and *M. cinerascens*, Sharpe, but differs from both in its larger size, very much darker colouring, and in the bill and under wing-coverts.

I have named this fine and very distinct new Flycatcher after its discoverer, Mr. H. H. Johnston.

2. *NECTARINIA KILIMENSIS*, sp. n.

Kilimanjaro, ♂, 5000 ft.

Very similar to *N. tacaze*, but differs as follows:—Head and neck metallic green, glossed with copper, and shading into fiery copper on the back; scapulars and upper tail-coverts with a greenish shade, but no lilac reflections; wings and tail brownish black with no blue shade; metallic edges of the tail-feathers lilac bronze, not greenish blue. Chin and throat metallic coppery green, not passing into metallic lilac on the front of the chest, which, with the remainder of the underparts, is dull black. Bill rather more curved, and the tail slightly more graduated. Total length 8·7 inches, culmen 1·15, wing 2·9, tail 5·6, tarsus 0·75.

Kilimanjaro, ♀, 4000 ft.

Very similar to *N. tacaze*, but with the throat less olive and of a

browner buff shade, and it has apparently a less distinct eyebrow. Total length 3·3 inches, culmen 0·95, wing 2·55, tail 1·3, tarsus 0·75.

Besides the specimens above described, the collection contains seven adult males and one female from elevations varying from 3000 to 5000 feet. The characters of the bill (which is rather more curved than in *N. tacazze*), and of the tail (which is rather more graduated), combined with the fiery copper colouring of the back and upper tail-coverts, and the absence of any lilac band between the colours of the throat and the black of the breast, indicate that its place is between *N. tacazze* and *N. reichenowi*.

I have named this bird after its locality, as I expect it will prove to be a very local form.

3. NECTARINIA REICHENOWI. (Plate LI.)

Drepanorhynchus reichenowi, Fischer, J. f. O. 1884, p. 56.

A male and two females of this species, of which the male only was described by Dr. Fischer.

Kilimanjaro, ♂, 4000 ft.

Entire head, neck, back, scapulars, least and median wing-coverts fiery copper, with slight lilac reflections at the ends of some of the feathers, and, when viewed in a certain light, with greenish reflections; remainder of the plumage brownish black; all the quills and tail-feathers very broadly edged with chrome-yellow; the primary-coverts and greater wing-coverts less broadly edged with chrome-yellow, the edges of the greater coverts changing into metallic lilac towards their ends. Bill and legs black. Total length 8·2 inches, culmen 1·2, wing 3·1, tail 5·4, tarsus 0·75.

Kilimanjaro, ♀, 5000 ft.

Very similar to the female of *N. tacazze*, excepting that it has broad deep yellow edges to all the quills and tail-feathers, and the wing-coverts edged with olive-yellow. Total length 3·1 inches, culmen 1·1, wing 2·6, tail 2·2, tarsus 0·65.

There is also a second female in the collection.

The skins do not enable me to detect the actual junction of the metallic throat and the black breast of the male, nor can I describe the sides of the head in the female.

The proposal of the distinct generic name *Drepanorhynchus* for this species appears to me quite superfluous. The bill is certainly more curved than in *N. famosa*, but in that respect *N. kilimensis* is exactly intermediate; in the gradation of the tail-feathers *N. kiliensis* is similar, and *N. tacazze* is just intermediate between it and *N. famosa*. The centre tail-feathers are as broad in the present species as in *N. famosa*.

4. PRATINCOLA AXILLARIS, sp. n.

Kilimanjaro, ♂, 7000 ft.

Upper parts, entire head, chin and throat black, most of the feathers of the back partially edged with brown; sides of the neck,